U.S. DEPARTMENT OF ENERGY

SAVANNAH RIVER OPERATIONS OFFICE
AIKEN, SC 29802

NEWS MEDIA CONTACT:
Jim Giusti, DOE, (803) 952-7697
james-r.giusti@srs.gov

John Lindsay, SRR, (803) 208-6253
john02lindsay@srs.gov

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Blowing Bubbles

Using Recovery Act Funds, SRS Looks to Apply Novel Solutions to Unique Challenges

Aiken, SC – Blowing bubbles is not usually associated with processing liquid radioactive waste. Nevertheless, new bubbler technology and other enhancements are soon expected to double the amount of radioactive waste processed annually at the Department of Energy's (DOE) Savannah River Site (SRS).

The bubbler technology, which will be used at the Site's Defense Waste Processing Facility (DWPF), was modified from existing technology by Catholic University's Vitreous State Laboratory (VSL) under contracts with SRS to improve DWPF melter performance. Its implementation and installation at SRS will be funded by the American Recovery and Reinvestment Act.

Officials from SRS recently visited VSL in Washington, D.C., to learn more about the technology.

"It's much like blowing air through a giant straw into syrup," said Cliff Winkler, SRR Chief Engineer. "Except here the syrup is really liquid radioactive waste heated to a temperature of about 2,000 degrees Fahrenheit inside what looks like a giant 65 ton teapot."

During processing, frit and radionuclides are combined in a melter and heated to form molten glass. The bubblers - tubular devices inserted into the melter - blow argon gas through the molten glass waste mixture to maintain an even temperature and allow higher-temperature operation, which produces the best glass form. The superheated mixture is then poured into large stainless steel containers, allowed to harden and stored at nearby SRS facilities.

Jean Ridley, who oversees the SRS Recovery Act project at DWPF as the Deputy Federal Project Director of the Liquid Waste Savannah River Site Recovery Act Project, said, "Inserting

bubblers into the melter will significantly enhance the facility's capability to process more than 36 million gallons of liquid radioactive waste being removed from the underground waste tanks at SRS. Recovery Act funding is accelerating SRS tank closure and further reducing long-term risk to our workers and the public."

Ridley led the team to Washington, which included Savannah River Remediation (SRR) LLC's President and Project Director, Jim French.

Additional information on the Department of Energy's Office of Environmental Management and the Savannah River Site can be found at http://www.em.doe.gov or http://www.srs.gov. For more information about the SRS Recovery Act Project, please visit www.srs.gov/recovery.

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